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Perkins Coie LLP			KIM, DAVID S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/994,475	Applicant(s) CIANCAGLINI ET AL.	
	Examiner DAVID S. KIM	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-15, 17-33 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-15, 17-30, 35, 37 and 38 is/are allowed.
- 6) ☒ Claim(s) 31-33, 36 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

1. **Claims 33 and 36** are objected to because of the following informalities:

In claims 33 and 36, "the plurality of unidirectional optical paths" is used where "the a plurality of unidirectional optical paths" may be intended. Otherwise, antecedent basis is lacking.

Appropriate correction is required.

Allowable Subject Matter

2. **Claims 8-15, 17-30, 35, and 37-38** are allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 31-33, 36, and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka (U.S. Patent No. 5,452,115) in view of Ramaswami et al. (*Optical Networks: A Practical Perspective*, hereinafter "Ramaswami") and Gehlhaar et al. (U.S. Patent No. 5,892,916, hereinafter "Gehlhaar").

Regarding claim 31, Tomioka discloses:

(Currently amended) A method comprising:

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scheduling packet transmissions by using a scheduler (e.g., NWC in Fig. 2B) in a wavelength division multiplexed (WDM) network (network in Fig. 2B is a wavelength multiplexing optical network, col. 9, l. 4-17), the WDM network comprising the scheduler (e.g., NWC) and a plurality of nodes (nodes 2), the optical path having a control channel (col. 9, l. 58-59) and a data channel (col. 9, l. 59), said scheduling comprising

originating and sending a first control packet from the scheduler ("control signal" in col. 9, l. 52 is originated and sent from 12 in Fig. 4) to a first node (e.g., "node that generated a request" in col. 9, l. 51-52) of the plurality of nodes to cause the first node to transmit information to a second node immediately or after a delay known (see the schedule of known delays in Figs. 7A-8B) to the scheduler (transmit schedule known to the scheduler, as in col. 11, l. 37-39) and the first node (transmit schedule known to the "node n1", as in col. 11, l. 37-39), wherein the first control packet includes a source information identifying the first node as a source node (col. 11, l. 37-43, the instruction from "network controller 3" is communicated to "node n1", which implies that this instruction includes some addressing information to "node n1", which may also be suitably characterized as "source information"), information identifying the second node as a destination node (col. 11, l. 37-43, the instruction from "network controller 3" instructs transmission to "node n3", which may be suitably characterized as "information identifying the second node as a destination node"), and a value which corresponds to an amount of information which the source node can transmit (col. 11, l. 37-43, the instruction from "network controller 3" instructs transmission within the limits of "time slot S3").

Tomioka does not expressly disclose:

a unidirectional optical path coupling the scheduler and the plurality of nodes to each other; and
using the scheduler to schedule and provision for feedback from the plurality of nodes to the scheduler.

Regarding the limitation of the "unidirectional optical path", notice that Tomioka teaches a bidirectional path (ring fiber 6 in Fig. 2B). However, the practice of implementing a bidirectional path into

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unidirectional paths is known in the art, as exemplified by Ramaswami (e.g., Fig. 13.1). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement a variation with a unidirectional path. One of ordinary skill in the art would have been motivated to do this for any variety of suitable advantages of a unidirectional system over a bidirectional system, such as relative ease of design (Ramaswami, item 8 on p. 507), less complicated amplifiers (Ramaswami, item 9 on p. 507), and the potential lack of need of a guard band between sets of wavelengths (Ramaswami, item 10 on p. 507).

Regarding the limitation of “using the scheduler to schedule and provision for feedback from the plurality of nodes to the scheduler”, notice the well known teaching of polling a plurality of nodes to obtain feedback from the plurality of nodes, as shown by Gehlhaar (e.g., col. 2, l. 35-57, col. 3, l. 11-12). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include such polling in the method of the prior art of record. One of ordinary skill in the art would have been motivated to do this since such feedback allows one to manage the resources of the network to ensure optimum performance (Gehlhaar, col. 2, l. 35-38). Accordingly, notice that the scheduler of Tomioka serves as a network manager for the network, and Gehlhaar teaches that the feedback would go from the network elements to the destination of the network manager (Gehlhaar, col. 2, l. 45-49, col. 3, l. 11-12).

Regarding claim 32, Tomioka in view of Ramaswami and Gehlhaar discloses:

The method of claim 31, wherein using the scheduler to schedule and provision for feedback from the plurality of nodes to the scheduler comprises:

sending a third control packet (any suitable control packet after the transmission of two control packets from the scheduler of Tomioka) over the control channel (Tomioka, col. 9, l. 58-59) to each of the plurality of nodes (Gehlhaar, e.g., col. 2, l. 35-57, col. 3, l. 11-12) specifying the scheduler as a destination (Notice that the scheduler of Tomioka serves as a network manager for the network, and Gehlhaar teaches that the feedback would go from the network elements to the destination of the network manager (Gehlhaar, col. 2, l. 45-49, col. 3, l. 11-12). Accordingly, it obvious for the third control packet to specify the scheduler as the destination node for communications from the network elements to the network manager); and

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receiving the feedback from the plurality of nodes over the data channel as scheduled in the third (any suitable control packet after the transmission of two control packets from the scheduler of Tomioka) control packet (One of ordinary skill in the art would recognize that either channel is suitable for carrying response communications (Gehlhaar, e.g., col. 3, l. 11-12) from the nodes to the scheduler. Thus, it is an obvious variation for each of the plurality of nodes sends feedback to the scheduler over the data channel in response to the second control packet.).

Regarding claim 33, Tomioka in view of Ramaswami and Gehlhaar discloses:

The method of claim 31, further comprising:

the plurality of nodes simultaneously transmitting and receiving a plurality of data messages on the plurality of unidirectional optical paths (Tomioka, e.g., transmitting and receiving for each node 2 in Fig. 2B simultaneously on different wavelengths, as shown in Figs. 7A-8B).

Regarding claim 36, Tomioka in view of Ramaswami and Gehlhaar discloses:

Tomioka in view of Ramaswami and Gehlhaar discloses:

The method of claim 31, wherein the plurality of unidirectional optical paths are configured into loops through which packets are transmitted (in view of the unidirectional path teachings of Ramaswami in the treatment of claim 1 above, optical ring fiber 6 in Fig. 2B of Tomioka would be unidirectional paths configured into loops).

Regarding claim 39, Tomioka in view of Ramaswami and Gehlhaar discloses:

The method of claim 31, wherein the plurality of nodes transmit and receive a plurality of data messages on the unidirectional optical path using a single wavelength (Tomioka, e.g., control data in the control channel of the "same wavelength" of col. 14, l. 14-24; e.g., each node 2 in Fig. 2B transmits and receives using a single wavelength per transmission/reception).

Response to Arguments

6. Applicant's arguments with respect to claim 31 (filed on 23 June 2008, REMARKS, p. 12-13) have been considered but are moot in view of the new ground(s) of rejection. In particular, notice the application of teachings from Tomioka as the primary reference.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lazar et al. ("MAGNET II: a metropolitan area network based on asynchronous timesharing") is cited to show an apparatus with media access control (p. 1587, MAC), unidirectional optical links (p. 1586, IV. Ring Switch Fabric), and scheduling (p. 1588, B. Ring Scheduling).

Sachs ("Alternative local area network access protocols") is cited to show various multiple access protocols, in particular, Demand Assignment protocols with Central Control (p. 25).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. KIM whose telephone number is (571)272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. K./
Examiner, Art Unit 2613

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613